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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/508,850	NELSON ET AL.	
	Examiner	Art Unit	
	CHRISTOPHER FINDLEY	2621	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is FINAL. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-48 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-48 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date 9/24/2004, 6/19/2009.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1, 4, 5, 8-10, 12-13, 15, 18-23, 30-38, and 46-48 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeyasu et al. (US 4255762 A, hereinafter referred to as "Takeyasu").**

Re **claim 1**, Takeyasu discloses a method of repeating an inspection of a surface of interest with an inspection system including a control unit coupled to a camera, the method comprising acts of: providing a sequence of camera control parameters corresponding to first inspection data of the surface of interest from the control unit to the camera (Takeyasu: Abstract section, "a control device which is capable of programmed operation and which drives and controls the positioning mechanism in a predetermined operation sequence programmed in advance"); and acquiring at least one second inspection data of the surface of interest according to the sequence of camera control parameters (Takeyasu: Abstract section, "the control device controlling the positioning mechanism on the basis of an output signal from the proximity sensor, so that the inspection head portion can be moved and controlled from an initially-set position outside the pipe towards an inspection position of the pipe without contacting with the object to-be-inspected").

Re **claim 4**, Takeyasu discloses that the act of acquiring at least one second inspection data of the surface includes an act of acquiring an inspection sequence of images of the surface of interest (Takeyasu: column 11, lines 51-57, "abnormality processing routine" indicates adaptive control based on previously sensed data).

Re **claim 5**, Takeyasu discloses that the sequence of camera control parameters includes a plurality of sets of camera control parameters, each set of camera control parameters defining at least

one pose of the camera (Takeyasu: Fig. 2, the sensor apparatus is displaceable along each of the x, y, and z axes).

Re **claim 8**, Takeyasu discloses an act of mounting the camera at a reference location having a known position relative to the surface of interest (Takeyasu: Fig. 1; column 4, lines 4-11, the apparatus is mounted in a specific location).

Re **claim 9**, Takeyasu discloses that the act of applying the sequence of camera control parameters includes an act of applying the sequence of camera control parameters such that each set of camera control parameters is an offset from the reference location (Takeyasu: column 11, lines 3-15 and 38-50, alignment correction based on measured differences between two proximity sensors).

Re **claim 10**, Takeyasu discloses that the act of applying the sequence of camera control parameters includes an act of applying the sequence of camera control parameters such that each set of camera control parameters is an offset from an immediately preceding pose of the camera (Takeyasu: column 11, lines 26-37, position correction performed using feedback from previously measured proximity readings).

Re **claim 12**, Takeyasu discloses an inspection apparatus adapted to automatically acquire inspection data of a surface of interest, the apparatus comprising: data collection equipment including a camera capable of acquiring at least one image of the surface of interest (Takeyasu: column 4, lines 49-54); and a control unit coupled to the data collection equipment, the control unit configured to provide a sequence of camera control parameters corresponding to first inspection data of the surface of interest to the camera to acquire at least one second inspection data of the surface of interest (Takeyasu: column 7, lines 15-27).

Re **claim 13**, Takeyasu discloses that the sequence of camera control parameters result at least in part from acquiring a first sequence of images of the surface of interest (Takeyasu: Abstract section, "the control device controlling the positioning mechanism on the basis of an output signal from the proximity sensor, so that the inspection head portion can be moved and controlled from an initially-set

position outside the pipe towards an inspection position of the pipe without contacting with the object to-be-inspected"; column 11, lines 51-57, "abnormality processing routine" indicates adaptive control based on previously sensed data).

Re **claim 15**, arguments analogous to those presented for claim 4 above are applicable to claim 15. Therefore, claim 15 has been analyzed and rejected with respect to claim 4 above.

Re **claim 18**, Takeyasu discloses that the camera is a video camera (Takeyasu: column 4, lines 49-54).

Re **claim 19**, Takeyasu discloses that the video camera has at least two degrees of freedom (Takeyasu: Fig. 2, the figure shows both linear movement and rotational movement along each of the x, y, and z axes, thus indicating six degrees of freedom).

Re **claim 20**, Takeyasu discloses that the video camera has at least four degrees of freedom (Takeyasu: Fig. 2, the figure shows both linear movement and rotational movement along each of the x, y, and z axes, thus indicating six degrees of freedom).

Re **claim 21**, Takeyasu discloses that the video camera has at least six degrees of freedom (Takeyasu: Fig. 2, the figure shows both linear movement and rotational movement along each of the x, y, and z axes, thus indicating six degrees of freedom).

Re **claim 22**, Takeyasu discloses that the control unit comprises a computer having a memory for storing at least one sequence of camera control parameters (Takeyasu: column 7, lines 15-20, ROM for storing programs).

Re **claim 23**, Takeyasu discloses that the memory is encoded with at least one program configured to automatically analyze the inspection sequence of images to detect the presence or absence of subject matter of interest in each image in the sequence (Takeyasu: column 7, lines 15-20, control programs stored in ROM).

Re claim 30, Takeyasu discloses the inspection apparatus of claim 18, in combination with the surface of interest (Takeyasu: Abstract section, the disclosure includes an object to be inspected).

Re claim 31, Takeyasu discloses that the surface of interest is an inside surface of a substantially closed volume (Takeyasu: Abstract section, inner surface of a pipe being an object to be inspected).

Re claim 32, Takeyasu discloses that the surface of interest is a tank (Takeyasu: Fig. 1; column 4, lines 4-11, shows a nuclear reactor, which is analogous to a tank since it is an enclosed chamber).

Re claim 33, Takeyasu discloses that access to the inside of the volume is permitted through at least one entry point (Takeyasu: Fig. 1 and column 4, lines 4-11).

Re claim 34, Takeyasu discloses that the data collection equipment further includes a stalk having the video camera coupled to a first end of the stalk, the stalk comprising: means for securing the stalk to the at least one entry point, such that the first end of the stalk is inside the volume (Takeyasu: Fig. 1, traverse machine 6; column 12-15).

Re claim 35, Takeyasu discloses means for positioning the camera in a known reference position with respect to the volume (Takeyasu: Fig. 4(a), servomotor 42).

Re claim 36, Takeyasu discloses that the data collection equipment is adapted to be submersed in a fluid (Takeyasu: column 1, lines 16-18, inspection of a liquid storage tank).

Re claim 37, Takeyasu discloses that the data collection equipment includes locomotion means adapted to navigate the data collection equipment through the fluid (Takeyasu: Fig. 4(a), servomotor 42; Fig. 2, movement along x, y, and z axes).

Re claim 38, Takeyasu discloses a method of inspecting a surface of interest, the method comprising acts of: automatically applying a sequence of camera control parameters to acquire a sequence of images of the surface of interest (Takeyasu: column 4, lines 49-54 and Abstract section);

and automatically processing the sequence of images to evaluate the surface of interest to provide an inspection result (Takeyasu: column 7, lines 15-27 and Abstract section).

Re **claim 46**, Takeyasu discloses an automated inspection apparatus comprising: means for automatically acquiring at least one sequence of images of a surface of interest from a sequence of camera control parameters (Takeyasu: column 4, lines 49-54 and Abstract section); and means for automatically processing the at least one sequence of images to automatically evaluate the surface of interest to provide an inspection result (Takeyasu: column 7, lines 15-27 and Abstract section).

Re **claim 47**, Takeyasu discloses that the means for automatically acquiring at least one sequence comprises: a video camera (Takeyasu: column 4, lines 49-54); a processor coupled to the video camera via communications means (Takeyasu: Fig. 4(b), microprocessor 71); and a memory accessible by the processor having stored thereon a sequence of camera control parameters associated with a plurality of poses of the camera that when applied to the camera by the processor results in the at least one sequence of images (Takeyasu: column 7, lines 15-20, control programs stored in ROM).

Re **claim 48**, Takeyasu discloses that the means for automatically processing the at least one sequence of images includes a processor and a memory accessible by the processor having encoded thereon at least one program that when executed by the processor assesses each image in the at least one sequence of images such that the amount of subject matter of interest in each image is determined (Takeyasu: column 7, lines 15-20, control programs stored in ROM).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 2-3, 6-7, 11, 14, 16-17, 26-29, and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeyasu et al. (US 4255762 A) in view of Marx (US 4974168 A).**

Re **claim 2**, Takeyasu discloses a majority of the features of claim 2, as discussed above in claim 1, but Takeyasu does not specifically disclose that the act of providing the sequence of camera control parameters includes an act of providing a sequence of camera control parameters having resulted at least in part from manually acquiring a first sequence of images of the surface of interest. However, Marx discloses an automatic pipeline data collection and display system, wherein the capability exists for the operator to manually initialize footage and time function data (Marx: column 11, lines 52-53) and the operator may issue a command for the control program to commence (Marx: column 10, lines 61-64). Since both Takeyasu and Marx relate to performing inspections of enclosed areas, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the manual operation capabilities of Marx with the inspection system of Takeyasu in order to provide a system with increased stability of data storage, improved display of data without reduction in video image quality, and enhanced ability to monitor and display additional functions (Marx: column 2, lines 10-14).

Re **claim 3**, Takeyasu discloses a majority of the features of claim 3, as discussed above in claim 1, but Takeyasu does not specifically disclose that the act of providing the sequence of camera control parameters includes an act of providing a sequence of camera control parameters having resulted at least in part from operator programming. However, Marx discloses an automatic pipeline data collection and display system, wherein the capability exists for the operator to manually initialize footage and time function data (Marx: column 11, lines 52-53) and the operator may issue a command for the control program to commence (Marx: column 10, lines 61-64). Since both Takeyasu and Marx relate to performing inspections of enclosed areas, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the manual operation capabilities of Marx with the inspection system of Takeyasu in order to provide a system with increased stability of data storage, improved display of data without reduction in video image quality, and enhanced ability to monitor and display additional functions (Marx: column 2, lines 10-14).

Re **claim 6**, Takeyasu discloses a majority of the features of claim 6, as discussed above in claim 5, but Takeyasu does not explicitly disclose that the act of acquiring an inspection sequence of images includes an act of acquiring at least one image from each pose of the camera defined by the plurality of sets of camera control parameters. However, Marx indicates that video images are captured at several angular positions and indexed accordingly with position information (Marx: column 5, lines 13-44). Since both Takeyasu and Marx relate to performing inspections of enclosed areas, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the information correlation of Marx with the inspection system of Takeyasu in order to provide a system with increased stability of data storage, improved display of data without reduction in video image quality, and enhanced ability to monitor and display additional functions (Marx: column 2, lines 7-14).

Re **claim 7**, Takeyasu does not explicitly disclose that each set of camera control parameters includes a value related to at least one of a pan action, a tilt action, a zoom and a position. However, Marx discloses that the camera position sensor may tilt the camera (Marx: column 5, lines 38-41). Since both Takeyasu and Marx relate to performing inspections of enclosed areas, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the information correlation of Marx with the inspection system of Takeyasu in order to provide a system with increased stability of data storage, improved display of data without reduction in video image quality, and enhanced ability to monitor and display additional functions (Marx: column 2, lines 7-14).

Re **claim 11**, Takeyasu discloses a majority of the features of claim 11, as discussed above in claim 1, but does not specifically disclose an act of obtaining the sequence of camera control parameters from a computer readable medium. However, Marx discloses that the system provides program update capabilities via linkage of the CPU to an external device such as a disk drive (Marx: column 9, lines 34-41). Since both Takeyasu and Marx relate to performing inspections of enclosed areas, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the update capabilities of Marx with the inspection system of Takeyasu in order to provide a system with increased stability of

data storage, improved display of data without reduction in video image quality, and enhanced ability to monitor and display additional functions (Marx: column 2, lines 10-14).

Re **claim 14**, arguments analogous to those presented for claim 3 above are applicable to claim 14. Therefore, claim 14 has been analyzed and rejected with respect to claim 3 above.

Re **claim 16**, Takeyasu discloses a majority of the features of claim 16, as discussed above. Additionally, Takeyasu discloses that the sensor apparatus is displaceable along each of the x, y, and z axes (Takeyasu: Fig. 2), but Takeyasu does not explicitly disclose that the sequence of camera control parameters includes a plurality of sets of camera control parameters, each set of camera control parameters defining a pose of the camera such that the inspection sequence of images includes at least one image acquired from each pose defined by the plurality of sets of camera control parameters. However, Marx indicates that video images are captured at several angular positions and indexed accordingly with position information (Marx: column 5, lines 13-44). Since both Takeyasu and Marx relate to performing inspections of enclosed areas, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the information correlation of Marx with the inspection system of Takeyasu in order to provide a system with increased stability of data storage, improved display of data without reduction in video image quality, and enhanced ability to monitor and display additional functions (Marx: column 2, lines 7-14).

Re **claim 17**, arguments analogous to those presented for claim 7 above are applicable to claim 17. Therefore, claim 17 has been analyzed and rejected with respect to claim 7 above.

Re **claim 26**, Takeyasu does not explicitly disclose a video recorder coupled to the video camera and the computer, the video recorder adapted to receive video data from the video camera and to provide image information based on the video data to the computer. However, Marx discloses that a video hard copy is stored (Marx: Fig. 3, hard copy 65; column 4, lines 65-67). Since both Takeyasu and Marx relate to performing inspections of enclosed areas, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the storage capability of Marx with the inspection system of

Takeyasu in order to provide a system with increased stability of data storage, improved display of data without reduction in video image quality, and enhanced ability to monitor and display additional functions (Marx: column 2, lines 7-14).

Re **claim 27**, Takeyasu discloses that when the inspection system is operating on the sequence of camera control parameters the video data includes an inspection sequence of images of the surface of interest and the image information includes a digital inspection sequence of images of the surface of interest (Takeyasu: column 11, lines 51-57, adaptive control performed in conjunction with sensors).

Re **claim 28**, Takeyasu discloses a display coupled to the video recorder for displaying the video data received from the video camera (Takeyasu: column 4, lines 49-54).

Re **claim 29**, Takeyasu does not explicitly disclose an interface device adapted to be controlled by an operator and to provide control signals indicative of operator control. However, Marx discloses a keyboard for use by an operator (Marx: Fig. 3, keyboard comments 51; Fig. 8). Since both Takeyasu and Marx relate to performing inspections of enclosed areas, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the manual operation capabilities of Marx with the inspection system of Takeyasu in order to provide a system with increased stability of data storage, improved display of data without reduction in video image quality, and enhanced ability to monitor and display additional functions (Marx: column 2, lines 10-14).

Claim 39 has been analyzed and rejected with respect to claim 2 above.

Claim 40 has been analyzed and rejected with respect to claim 3 above.

5. **Claims 24-25 and 41-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeyasu et al. (US 4255762 A) in view of Ng et al. (US 7460691 B2).**

Re **claim 24**, Takeyasu discloses a majority of the features of claim 24, as discussed above in claim 22, but Takeyasu does not specifically disclose that the at least one program automatically

analyzes the inspection sequence of images by distinguishing subject matter of interest from the image content by at least one of color analysis, edge analysis and shape analysis. However, Ng discloses a system for image processing, wherein edge density information of an input image is processed to distinguish between complex texture of a region of interest and homogeneous texture of the background (Ng: column 9, lines 50-54). Since both Takeyasu and Ng relate to monitoring a defined region to detect abnormalities, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the image processing principles of Ng with the system of Takeyasu in order to eliminate the need for reference image comparison (Ng: column 9, lines 54-58).

Re **claim 25**, Takeyasu does not specifically disclose that the at least one program provides an inspection result of the surface of interest. However, Ng discloses that an input video image may be processed whereby the presence of a specific object in the region of interest is determined (Ng: column 1, lines 50-53). Since both Takeyasu and Ng relate to monitoring a defined region to detect abnormalities, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the image processing principles of Ng with the system of Takeyasu in order to eliminate the need for reference image comparison (Ng: column 9, lines 54-58).

Re **claim 41**, Takeyasu discloses a majority of the features of claim 41, as discussed above in claim 38, but Takeyasu does not specifically disclose that the act of automatically processing the sequence of images includes an act of automatically determining the amount of subject matter of interest present in the sequence of images. However, Ng discloses that gray level pixel intensity is used to determine average intensity and variance with respect to the number of pixels in a region of interest (Ng: column 9, lines 3-24 and equations (1) and (2)), thereby indicating that the amount of subject matter of interest is determined. Since both Takeyasu and Ng relate to monitoring a defined region to detect abnormalities, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the image processing principles of Ng with the system of Takeyasu in order to eliminate the need for reference image comparison (Ng: column 9, lines 54-58).

Re **claim 42**, Takeyasu does not specifically disclose that the act of automatically determining the amount of subject matter of interest includes an act of automatically detecting characteristic features of

the subject matter of interest. However, Ng discloses that the pixel intensity values for a region of interest are determined (Ng: column 9, lines 3-24 and equations (1) and (2)). Since both Takeyasu and Ng relate to monitoring a defined region to detect abnormalities, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the image processing principles of Ng with the system of Takeyasu in order to eliminate the need for reference image comparison (Ng: column 9, lines 54-58).

Re **claim 43**, Takeyasu does not specifically disclose that the act of automatically detecting characteristic features of the subject matter of interest includes an act of automatically detecting edge characteristics of the subject matter of interest. However, Ng discloses that edge density information of an input image is processed to distinguish between complex texture of a region of interest and homogeneous texture of the background (Ng: column 9, lines 50-54). Since both Takeyasu and Ng relate to monitoring a defined region to detect abnormalities, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the image processing principles of Ng with the system of Takeyasu in order to eliminate the need for reference image comparison (Ng: column 9, lines 54-58).

Re **claim 44**, Takeyasu does not specifically disclosethat the act of automatically detecting edge characteristics includes an act of automatically detecting edge characteristics based on at least one of edge strength, edge cluster size, and edge cluster eccentricity. However, Ng discloses that gray level pixel intensity is used to determine average intensity and variance with respect to the number of pixels in a region of interest (Ng: column 9, lines 3-24 and equations (1) and (2)), thereby indicating that the size of the region of interest is determined. Since both Takeyasu and Ng relate to monitoring a defined region to detect abnormalities, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the image processing principles of Ng with the system of Takeyasu in order to eliminate the need for reference image comparison (Ng: column 9, lines 54-58).

Re **claim 45**, Takeyasu does not specifically disclose that the act of automatically detecting edge characteristics includes an act of evaluating an edge cluster based on at least one of the mean greyscale value of the edge cluster and the standard deviation of the greyscale values of the edge cluster. However, Ng discloses that gray level pixel intensity is used to determine average intensity and variance

with respect to the number of pixels in a region of interest (Ng: column 9, lines 3-24 and equations (1) and (2)). Since both Takeyasu and Ng relate to monitoring a defined region to detect abnormalities, one of ordinary skill in the art at the time of the invention would have found it obvious to combine the image processing principles of Ng with the system of Takeyasu in order to eliminate the need for reference image comparison (Ng: column 9, lines 54-58).

Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER FINDLEY whose telephone number is (571)270-1199. The examiner can normally be reached on Monday-Friday (8:30 AM-5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on 571-272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marsha D. Banks-Harold/
Supervisory Patent Examiner, Art Unit 2621

/Christopher Findley/